

WHAT IS CLAIMED IS:

1. A serial link transceiver with defect-detecting capability, comprising:
a differential transmitter;
a differential receiver;
first and second differential transmission lines coupled between differential receiver and the differential transmitter; and
a monitoring system that detects a defect in one of the differential transmission lines.
2. The apparatus according to claim 1, wherein the monitoring system detects one of:
open circuits in one of the transmission lines;
short circuits between one or more of the transmission lines and a power supply or ground plane; and
short circuits between the transmission lines.
3. The apparatus according to claim 2, wherein the differential transmission lines comprise AC-coupled differential transmission lines, and wherein the monitoring system detects short circuits across AC-coupling capacitors in one of the AC-coupled differential transmission lines.
4. The apparatus according to claim 1, wherein the monitoring system is coupled directly to one of the differential transmission lines.
5. The apparatus according to claim 1, wherein the monitoring system is coupled indirectly to one of the differential transmission lines.
6. The apparatus according to claim 5, wherein the monitoring system is coupled within the differential receiver.

7. The apparatus according to claim 6, wherein the differential receiver comprises a common mode control circuit coupled to the differential transmission lines, and the monitoring system is coupled to an output of the common mode control circuit.
8. The apparatus according to claim 7, wherein the monitoring system comprises a current monitoring system.
9. The apparatus according to claim 7, wherein the monitoring system comprises a voltage monitoring system.
10. The apparatus according to claim 1, wherein the monitoring system comprises a voltage monitoring system.
11. The apparatus according to claim 1, wherein the monitoring system comprises a current monitoring system.
12. The apparatus according to claim 8, wherein the current monitoring system is configured to sense alternating current provided by the common-mode control circuit.
13. The apparatus according to claim 8, wherein the current monitoring system is configured to sense direct current provided by the common-mode control circuit.
14. The apparatus according to claim 8, wherein the current monitoring system is configured to sense alternating current and direct current provided by the common-mode control circuit.

15. The apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when an alternating current is detected exceeding a predetermined threshold.

16. The apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when direct current is detected exceeding a predetermined threshold.

17. The apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when no signal is received by the differential receiver and a current is sensed by the monitoring system.

18. The apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect upon any of the following conditions:

alternating current is detected exceeding a predetermined threshold;

direct current is sensed by the current monitoring system is detected exceeding a predetermined threshold; or

no signal is received by the differential receiver and a current is sensed by the current monitoring system is detected exceeding a predetermined threshold.

19. The apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when an open circuit exists in one or more of the differential transmission lines.

20. The apparatus according to claim 1, wherein the monitoring is configured to output an indication of a defect when a short circuit exists between one or more of the differential transmission lines and a power supply.

21. The apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when a short circuit exists between the differential transmission lines.

22. The apparatus according to claim 3, wherein the monitoring system is configured to output an indication of a defect when a short circuit exists across an AC coupling in one or more of the AC-coupled differential transmission lines.

23. The apparatus according to claim 3, wherein the monitoring system is configured to output an indication of a defect when an open circuit exists in one or more of the differential AC-coupled transmission lines, when a short circuit exists between one or more of the differential AC-coupled transmission lines and a power supply, when a short circuit exists between the differential AC-coupled transmission lines, and/or when a short circuit exists across an AC coupling in one or more of the differential AC-coupled transmission lines.

24. A method for detecting defects in a serial link transceiver that includes differential transmission lines, comprising sensing for one of:

- open circuits in one of the transmission lines;
- short circuits between one or more of the transmission lines and a power supply or ground plane;
- short circuits between the transmission lines; or
- short circuits across AC-coupling capacitors in one of the differential transmission lines.

25. The method according to claim 24, wherein the sensing comprises sensing current.

26. The method according to claim 24, wherein the sensing comprises sensing voltage.

27. The method according to claim 24, wherein the sensing comprises directly sensing at one of the differential transmission lines.

28. The method according to claim 24, wherein the sensing comprises indirectly sensing.

29. The method according to claim 27, wherein the sensing comprises indirectly sensing at a receiver coupled within the differential transmission lines.

30. The method according to claim 24, wherein the sensing comprises indirectly sensing at a transmitter coupled within the differential transmission lines.